**Ernest Orlando Lawrence
Berkeley National Laboratory**

ENVIRONMENT, SAFETY, AND HEALTH TECHNICAL ASSURANCE PROGRAM MANUAL

**Revision 0
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Office of Contract Assurance / Environment, Health and Safety Division

**Ernest Orlando Lawrence Berkeley National Laboratory
University of California
Berkeley, CA 94707**

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Record of Revisions

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**ENVIRONMENT, SAFETY AND HEALTH
TECHNICAL ASSURANCE PROGRAM**

1.0   INTRODUCTION

This Environment, Safety and Health (ES&H) Technical Assurance Program (TAP) Manual describes how the Laboratory administers an ES&H technical assurance assessment program that conforms to the institutional requirements promulgated in the *LBNL ES&H Self-Assessment Program* (LBNL/PUB-5344, latest revision). The institutional program comprises all internal appraisal and reporting activities that identify environmental, safety, and health deficiencies and associated corrective actions. It is designed to meet U.S. Department of Energy (DOE) requirements for oversight (DOE Order 226.1A), and an integrated safety management system (DOE Policy 450.4). This manual describes ES&H technical assurance assessments, one of the four types of assessments required as part of the LBNL ES&H Self-Assessment Program. The other types of assessments – Division ES&H self-assessments, Safety Review Committee (SRC) Management of Environment, Safety, and Health (MESH) reviews, and Contract 31 Appendix B Performance Evaluation and Measurement Plan (PEMP) assessments - are described in LBNL/PUB-5344 *LBNL ES&H Self-Assessment Program.* This manual supports that program document and is intended to describe the following:

- Roles and responsibilities for the ES&H TAP

- Three year TAP schedule of assessments

- Technical Assurance Assessment Plan (TAAP) elements

- Methods for conducting TAP assessments

- Reporting TAP assessment results

2.0   GOALS AND OBJECTIVES

The ES&H Technical Assurance Program provides the framework for systematic reviews of ES&H programs and processes. The intent of TAP assessments is to provide assurance that ES&H programs and processes comply with their guiding regulations, are effective, and are properly implemented by Laboratory divisions.

OCA works with the Environment, Health and Safety (EH&S) Division to establish and maintain a three year TAP assessment schedule. LBNL assesses ES&H programs and processes based on institutional ES&H priorities, the DOE Berkeley Site Office's (BSO) assessment schedule, a risk-based gap analysis of assurance systems maintained by OCA, and an effectiveness review of the TAP. TAP assessments periodicity varies, depending on ES&H programs and processes hazards and risk.

TAP assessments include regular inspections of the workplace, work activities, and facilities. Assessments also include reviews of documentation such as ES&H program documentation, training activities, formal work authorizations, hazardous work permits, external assessments, and relevant databases [Corrective Action Tracking System (CATS), Activity Hazard Documents, Job Hazards Analysis, Chemical Management System, etc.]. The primary elements of ES&H technical assurance assessments are:

- Regulatory compliance

- Formal authorization compliance

- Program and process implementation effectiveness (including safety culture, support and issues with implementation throughout the Lab)

- Issues documentation via the CATS database

- Corrective action effectiveness

- Lessons Learned effectiveness

Systematic assessments of the technical ES&H programs and processes provide the divisions and EH&S a basis on which to direct resources for improved ES&H performance.

3.0   TECHNICAL ASSURANCE PROGRAM OVERSIGHT

The EH&S Division and OCA jointly oversee the implementation of the Technical Assurance Program. Two committees provide management and technical guidance. The first is the TAP Steering Committee, comprised of:

- EH&S Division Director, chair

- EH&S Division Deputy Director

- EH&S Division TAP Manager

- EH&S Occupational Safety Group Leader

- EH&S Industrial Hygiene Group Leader

- OCA ES&H Assurance Program Manager

- Division Safety Coordinator Committee Chair (representative of the Science & Operations Divisions).

The TAP Steering Committee meets quarterly to review TAP results, assess program effectiveness, and consider recommendations from the TAP Technical Guidance Committee.

The TAP Technical Guidance Committee is comprised of:

- EH&S Division TAP Manager, chair

- Designated representatives from each EH&S Division group

- OCA ES&H Assurance Program Manager

- Division Safety Coordinator Committee Chair.

The TAP Technical Guidance Committee provides technical support to SMEs performing TAP activities; helps standardize Technical Assurance Assessment Plans (TAAPs) and TAP assessment report formats; and reviews, coordinates, and proposes recommendations for TAP improvements to the TAP Steering Committee.

4.0   INDEPENDENT TECHNICAL ASSURANCE ASSESSMENTS

Periodically, ES&H programs may benefit from an independent assessment of program compliance and effectiveness. The EH&S TAP Manager and the OCA ES&H Assurance Program Manager will coordinate these independent assessments. The assessment schedule for independent assessments will be coordinated with DOE-BSO.

When the schedule is approved by the EH&S Division Director, independent technical assurance assessments will be planned by the EH&S TAP Manager and OCA ES&H Assurance Program Manager. Independent assessment activities will be coordinated through the appropriate EH&S Group Leader and SME, although they will not perform the assessment.

Planning for independent technical assurance assessments will include the development of an assessment plan and the appointment of an assessment team leader and team members. If knowledgeable personnel are not available on site, members may be requested from other DOE labs or by subcontract. The EH&S Division will fund these activities and will provide the necessary administrative support.

In some cases, independent assessment will replace regularly scheduled TAP assessments. Based on the TAP Guidance Committee's recommendation, the TAP Steering Committee will determine if an independent assessment will replace a regularly scheduled TAP assessment by the SME.

5.0   ROLES AND RESPONSIBILITIES

Environment, Health, and Safety (EH&S) Division Director

- Provides the necessary training and resources to ensure efficient and effective implementation of the TAP.

- Appoints the EH&S Division TAP Manager.

- Approves the TAP assessment schedule.

- Chairs the TAP Steering Committee.

- Analyzes the results of TAP reports to improve the effectiveness of the technical and management aspects of Laboratory ES&H programs.

EH&S Division TAP Manager

- Chairs the TAP Technical Guidance Committee.

- Serves as a member of the TAP Steering Committee.

- Supports Group Leaders and SMEs as they perform their assurance activities.

- Coordinates specialized training, as necessary.

- Provides routine reports to EH&S Division Management and Group Leaders on TAP progress and actions needed to improve the program.

- With OCA, coordinates the scope and schedule for independent assessments and coordinates these schedules with BSO.

- With OCA, plans and facilitates independent assessments as the schedule requires or as requested or otherwise needed by the programs.

- Coordinates TAP activities with OCA and the EH&S Group Leaders to ensure an effective overall ES&H assurance program, including maintenance of the 3-year TAP schedule.

EH&S Division Group Leaders

- Provide the necessary training and resources to ensure efficient and effective implementation of the TAP.

- Designate a representative to serve on the TAP Technical Guidance Committee.

- Review and approve TAAPs and TAP reports for their group's programs.

- Coordinate TAP activities with the TAP Manager to ensure an effective overall program.

EH&S Division Program Leads/Subject Matter Experts

- Prepare Technical Assurance Assessment Plans.

- Coordinate and perform TAP assessments. TAP assessments may be conducted by other qualified personnel.

- Report results of TAP assessments to subject divisions, EH&S Division management and OCA.

- Work with those performing independent assessments, as applicable.

Office of Contract Assurance (OCA)

- With the TAP Manager, maintain the 3-year TAP schedule.

- Participate in the TAP Steering Committee and TAP Guidance Committee.

- Support the EH&S Division in conducting TAP assessments, as necessary.

- Prepare annual Labwide ES&H self-assessment report.

- Conduct effectiveness reviews of the TAP process.

Division Personnel

- Coordinate with EH&S Division SMEs performing TAP assessments.

- Ensure that corrective actions are tracked properly.

6. 0   THREE YEAR TAP SCHEDULE

The EH&S Division and OCA maintain a 3-year schedule of TAP implementation. Programs undergo TAP assessments based on institutional ES&H priorities, and the following input:

- Feedback from the TAP Steering and Technical Guidance committees.

- Timing of external reviews. Where feasible, EH&S will perform TAP assessments prior to DOE and other external reviews.

- Effectiveness review of the previous year's TAP process. OCA reviews the results of the prior year's TAP process to determine if the assessments: 1) followed the proper protocol, 2) addressed institutional needs, and 3) identified the primary priorities and areas of concern. Lessons learned from the effectiveness review are considered when modify the 3-year TAP schedule, TAAPs, and this manual.

- An institutional risk-based gap analysis of assurance systems. OCA performs an annual risk-based assurance gap analysis to assess and rank significant ES&H risks. The risks are compared to existing assurance mechanisms to determine an appropriate assurance methodology. TAP assessments, Division ES&H Self-Assessment, MESH reviews, and other internal and external reviews are considered in determining appropriate assurance methods. When applicable, the 3-year schedule is modified to address these risks.

7.0   TECHNICAL ASSURANCE ASSESSMENT PLANS (TAAPS)

For each program and process included in the Technical Assurance Program, the program lead or SME of the EH&S Division prepares a Technical Assurance Assessment Plan (TAAP). TAAPs include a brief program description, the applicable regulations and governing documents, and a detailed plan for assessing program compliance (including all applicable requirements) and effectiveness. EH&S SMEs review and update TAAPs annually, at a minimum, based on the input discussed in Section 6.0 Three Year TAP Schedule. All TAAPs include:

Header

- Program/subject matter

- EH&S group

- Program lead/SME

- Revision number

- Date of revision

- Periodicity of assessments and reporting

Introduction

- Hazards and controls

- Program description

- Roles and responsibilities

- References - regulatory and program documents

- External reviews – 3-year history

- Regulatory-required program reviews

- Summary of open findings from previous quarter's TAP activities

Periodic Reviews – Quarterly or Semi-Annual

- Sampling universe – number or percentage of authorizations or permits planned for the review

- Scope and schedule for reviewing all applicable requirements

- Documentation, as applicable

    o Formal Work Authorizations

    o Hazardous Work Permits

    o Safety program documentation

    o Training reports

    o Fieldwork files

    o Field observation notes

    o E-mail correspondence

    o other

- Occurrence Reporting and Processing System (ORPS) and Noncompliance Tracking System (NTS) reports and corrective actions status.

- Evaluation of new issues entered into CATS and those closed since the last assessment. Effectiveness of corrective actions to address the issues.

- Lessons learned dissemination and follow-up actions

- Lines of Inquiry

- Field inspections and assessments STET checklists, if applicable

- TAP documentation retention methods

Annual Review

- Periodic review- quarterly or semi-annual

- Roll up and comprehensive program assessment based on quarterly or semi-annual results

- Institutional and divisional trends

- Programmatic opportunities for improvement and corrective actions, as appropriate

- Program accomplishments

- TAAP review and update

8.0 CONDUCTING TAP ASSESSMENTS

EH&S Division employees conduct assessment activities as described in the TAAPs. They may gather data from routine field activities, dedicated TAP inspections, or both. TAP assessments should enable SMEs to determine the following, as applicable:

- Is the ES&H Program under evaluation compliant and effective?

- Are operations in compliance with regulatory requirements?

- Are divisions in compliance with formal work authorizations and hazardous work permits?

- Are issues being documented in the CATS database?

- Are corrective actions implemented and effective? If not, are causal analysis and/or an extent of condition review warranted?

- Are lessons learned implemented and effective?

- What opportunities for improvement exist within the ES&H program or process?

Annually, SMEs perform a comprehensive assessment of programs and processes using data collected throughout the year. They identify institutional and/or divisional trends, assess program effectiveness, document institutional safety program issues in CATS, and develop programmatic corrective actions, as necessary.

9.0 REPORTING AND TRACKING TAP RESULTS

TAP assessments provide feedback on the Laboratory's ES&H performance in order to identify improvement opportunities, and determine and implement appropriate improvement strategies. EH&S Division SMEs report the results of periodic and annual technical assurance assessments to the subject division(s), EH&S Division, and OCA. Throughout the year, division personnel, EH&S professionals, and OCA apply the Issues Management Program to self-assessment activities. On an annual basis, OCA compiles the data and information from the year's self-assessment activities and summarizes results in the *LBNL Environment, Safety and Health Self-Assessment Report*.

9.1 Periodic TAP Assessment Reports

Each TAAP includes the planned periodicity of assessments. Most programs undergo evaluation on a quarterly basis, while some are evaluated semi-annually. The SME prepares a report approximately two weeks following the end of each assessment period. Appendix C is a Technical Assurance Report Template for TAP reports, and includes:

Header - Program name, date of report, report author.

Scope - Includes sufficient detail so reviewer does not have to refer to the TAAP to understand the scope of the review. TAP reports must address all appropriate elements of TAAP.

Summary - Definitive statements regarding the level of compliance with applicable regulations, governing documents and authorization or hazardous work permit.

Assessment Process – A brief description of the activities performed and lines of inquiry and/or checklists used to determine results.

Assessment Results

- Findings: Regulatory deficiencies and noncompliance with formal authorization or hazardous work permit.

- Observations: Observations indicate opportunities for improvement. They may be practices and conditions that are not necessarily out of compliance as observed, but could lead to noncompliance under other circumstances from those observed, or if left unaddressed. Observations also reflect practices that, with some additional level of effort, could achieve noteworthy practices status.

- Noteworthy Practices: Practices or conditions that are recognized for their excellence and should be considered for lab-wide application.

Issues Management

- Status of corrective actions taken to address unresolved findings from previous TAP Assessments.

- Implementation of Lessons Learned and Best Practices recorded in the LBNL Lessons Learned and Best Practices Database.

The TAP Steering and Technical Guidance Committees review TAP reports to assess TAP effectiveness and provide feedback to the SMEs performing and documenting TAP assessments. OCA reviews TAP reports to identify programmatic opportunities for improvement and divisional issues spanning multiple programs and processes.

9.2 Annual TAP Assessment Reports

EH&S SMEs prepare TAP annual reports on institutional and/or divisional trends, program and process effectiveness, and programmatic corrective actions, as applicable. OCA may prepare division-specific annual TAP reports, summarizing previously identified divisional trends, and any additional issues identified by OCA's review of divisions' performance across all the programs and processes assessed. OCA summarizes TAP activities and reports significant TAP results in the annual *LBNL Environment, Safety and Health Self-Assessment Report.*

9.3 Issues Management Program

Identifying and Tracking Deficiencies Through Resolution

LBNL tracks TAP assessment findings and corrective actions in CATS. CATS is used to document and track through resolution issues identified from employee discovery, internal or external oversight assessments, external reporting, suggested process improvements and associated actions that require formal corrective action. Divisions are responsible for documenting issues and corrective actions in CATS when EH&S SMEs identify deficiencies in

divisional implementation of ES&H programs. The EH&S Division SMEs document issues and corrective actions for programmatic deficiencies identified from performing TAP assessments. The Laboratory's *Issues Management Program Manual* [LBNL/PUB-5519 (1)] and *CATS Database User Manual* (OIA-OCA-0001) contain detailed guidance on issues identification, tracking, resolution, closure, validation, and effectiveness of corrective actions.

Lessons Learned and Best Practices

Incidents discovered during the course or as a result of assessments may warrant development and dissemination of a Lessons Learned Briefing. Any Lab staff may initiate briefings in the Lessons Learned/Best Practices database. The Laboratory's *Lessons Learned and Best Practices Program Manual* [LBNL/PUB-5519(4)] contains detailed guidance on Lessons Learned development, dissemination, and feedback.

APPENDICES

APPENDIX A: TAP Steering Committee Charter

APPENDIX B: TAP Technical Guidance Committee Charter

APPENDIX C: Technical Assurance Report Template

APPENDIX A
ES&H Technical Assurance Program
Steering Committee Charter

The ES&H Technical Assurance Program (TAP) Steering Committee is chaired by the EH&S Division Director and comprised of:

- EH&S Division Deputy Director

- EH&S TAP Manager

- Leaders of the EH&S Occupational Safety and Industrial Hygiene Groups

- OCA ES&H Assurance Program Manager

- Division Safety Committee Chair, will serve as a representative of the Science & Operations Divisions.

The TAP Steering Committee assesses program effectiveness, and considers recommendations from the TAP Technical Guidance Committee. The TAP Manager provides administrative and technical support to the EH&S Division Director for this meeting.

The Tap Steering Committee shall meet quarterly or as otherwise determined necessary by the Chair. A minimum of 2/3 members present shall constitute a quorum. Representatives unable to attend may send a representative who shall have full membership rights for that meeting. Decision making shall be by consensus as determined by the Chair. Decisions will be documented in the meeting minutes. Meeting minutes will be distributed to the Steering and Guidance Committee members and retained as a record.

APPENDIX B
ES&H Technical Assurance Program
Technical Guidance Committee Charter

The ES&H Technical Assurance Program (TAP) Technical Guidance Committee is chaired by the EH&S Division TAP Manager and is comprised of:

- Representatives from each EH&S Division group

- OCA ES&H Assurance Program Manager

- Division Safety Coordinator Committee Chair, who serves as a representative of the Science & Operations Divisions.

The TAP Technical Guidance Committee provides technical support to SMEs performing TAP activities; helps standardize Technical Assurance Assessment Plans (TAAPs) and TAP assessment report formats; and reviews, coordinates, and proposes recommendations for TAP improvements to the TAP Steering Committee.

The TAP Guidance Committee shall meet monthly or as otherwise determined necessary by the Chair. A minimum of 2/3 members present shall constitute a quorum. Representatives unable to attend may send a representative who shall have full membership rights for that meeting. Decision making shall be by consensus as determined by the chair. Recommendations to the TAP Steering Committee shall be drafted by the Chair, transmitted by memo, and retained. Meeting minutes shall be documented, distributed to the Steering and Guidance Committee members, and retained as records.

APPENDIX A

Technical Assurance Report Template

Technical Assurance (*Quarterly/ Semi-Annual*) Report Template

Program	
Date	
Author	

Scope
Include sufficient detail so reviewer does not have to refer to Technical Assurance Assessment Plan (TAAP) to understand scope of review. Ensure that report addresses all appropriate elements of TAAP.

Summary
Assessment/Statement of Authorization/Hazardous Work Permit Compliance

Assessment Process
A brief description of the activities performed and lines of inquiry and/or checklists used to determine results.

Assessment Results

Findings
- *Programmatic deficiencies.*
- *Noncompliance with formal authorization or hazardous work permit. Note: Other types of divisional deficiencies are communicated to the appropriate division for tracking and resolution and not included in the Technical Assurance Assessment report.*

Observations
Observations indicate opportunities for improvement. They may be practices and conditions that are not necessarily out of compliance as observed, but could lead to noncompliance under other circumstances from those observed, or if left unaddressed. Observations also reflect practices that, with some additional level of effort, could achieve noteworthy practices status.

Noteworthy Practices
Practices or conditions that are recognized for their excellence and should be considered for lab-wide application.

Issues Management

Status of corrective actions
Specifically, those corrective actions taken to address unresolved findings from previous Technical Assurance Assessments.

CATS Entries
CATS review as described in TAAP.

Data Monitoring and Analysis
Corrective action effectiveness per metrics identified in the TAAP.

Lessons Learned and Best Practices
Status of implementation of Lessons Learned and Best Practices recorded in the LBNL Lessons Learned and Best Practices Database.

Approvals

Report Author   _____   Date _____

Group Leader   _____   Date _____